



# SEQUENCE LISTING

<110> Hoechst Schering AgrEvo GmbH  
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<120> NUCLEIC ACID MOLECULES WHICH CODE FOR ENZYMES DERIVED FROM WHEAT AND WHICH ARE INVOLVED IN THE SYNTHESIS OF STARCH

<130> 514413-3849.1

<150> WO 99/58690

<151> 1999-11-18

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<150> 09/674,817

<151> 2000-11-06

<160> 11

<170> PatentIn version 3.1

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Ile Leu Val Leu Arg Pro Asp Val Glu Thr Asn Ile Tyr Ser Lys	
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 Lys Ala Asp Arg Val Thr Glu Glu Val Pro Leu Asp Pro Leu Met Asn  
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 Arg Thr Gly Asn Val Trp His Val Phe Ile Glu Gly Glu Leu His Asn  
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 Met Leu Tyr Gly Tyr Arg Phe Asp Gly Thr Phe Ala Pro His Cys Gly  
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 His Tyr Leu Asp Val Ser Asn Val Val Val Asp Pro Tyr Ala Lys Ala  
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 Val Ile Ser Arg Gly Glu Tyr Gly Val Pro Ala Arg Gly Asn Asn Cys  
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 180 185 190  
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 195 200 205  
 Tyr Glu Met His Leu Arg Gly Phe Thr Lys His Asp Ser Ser Asn Val  
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 Glu His Pro Gly Thr Phe Ile Gly Ala Val Ser Lys Leu Asp Tyr Leu  
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 Phe Asn His Thr Ala Glu Gly Asn Glu Asn Gly Pro Ile Leu Ser Phe  
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 Phe Tyr Asn Tyr Ser Gly Cys Gly Asn Thr Phe Asn Cys Asn His Pro  
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675 680 685

Val Ala Phe Asn Thr Ser His Leu Pro Ala Val Val Glu Leu Pro Glu  
690 695 700

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Pro Tyr Asp Phe Leu Thr Asp Asp Leu Pro Asp Arg Ala Leu Thr Ile  
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ata gaa ggt gac atg atc aca aca ggg aca cct ctt gtt act cca cca	1299
Ile Glu Gly Asp Met Ile Thr Thr Gly Thr Pro Leu Val Thr Pro Pro	
415 420 425	
ctt att gac atg atc agc aat gac cca att ctt gga ggc gtc aag ctc	1347
Leu Ile Asp Met Ile Ser Asn Asp Pro Ile Leu Gly Gly Val Lys Leu	
430 435 440	
gtt gct gaa gca tgg gat gca gga ggc ctc tat caa gta ggt caa ttc	1395
Val Ala Glu Ala Trp Asp Ala Gly Gly Leu Tyr Gln Val Gly Gln Phe	
445 450 455 460	
cct cac tgg aat gtt tgg tct gag tgg aat ggg aag tac cgg gac att	1443
Pro His Trp Asn Val Trp Ser Glu Trp Asn Gly Lys Tyr Arg Asp Ile	
465 470 475	

gtg cgt caa ttc att aaa ggc act gat gga ttt gct ggt ggt ttt gcc	1491
Val Arg Gln Phe Ile Lys Gly Thr Asp Gly Phe Ala Gly Gly Phe Ala	
480 485 490	
gaa tgt ctt tgt gga agt cca cac cta tac cag gca gga gga agg aaa	1539
Glu Cys Leu Cys Gly Ser Pro His Leu Tyr Gln Ala Gly Gly Arg Lys	
495 500 505	
cct tgg cac agt atc aac ttt gta tgt gca cac gat gga ttt aca ctg	1587
Pro Trp His Ser Ile Asn Phe Val Cys Ala His Asp Gly Phe Thr Leu	
510 515 520	
gct gat ttg gta aca tat aat aac aag tac aat tta cca aat ggg gag	1635
Ala Asp Leu Val Thr Tyr Asn Asn Lys Tyr Asn Leu Pro Asn Gly Glu	
525 530 535 540	
aac aac aga gat gga gaa aat cac aat ctt agc tgg aat tgt ggg gag	1683
Asn Asn Arg Asp Gly Glu Asn His Asn Leu Ser Trp Asn Cys Gly Glu	
545 550 555	
gaa gga gaa ttc gca aga ttg tct gtc aaa aga ttg agg aag agg cag	1731
Glu Gly Glu Phe Ala Arg Leu Ser Val Lys Arg Leu Arg Lys Arg Gln	
560 565 570	
atg cgc aat ttc ttt gtt tgt ctc atg gtt tct caa gga gtt cca atg	1779
Met Arg Asn Phe Phe Val Cys Leu Met Val Ser Gln Gly Val Pro Met	
575 580 585	
ttc tac atg ggt gat gaa tat ggc cac aca aaa ggg ggc aac aac aat	1827
Phe Tyr Met Gly Asp Glu Tyr Gly His Thr Lys Gly Gly Asn Asn Asn	
590 595 600	
aca tac tgc cat gat tct tat gtc aat tat ttt cgc tgg gat aaa aaa	1875
Thr Tyr Cys His Asp Ser Tyr Val Asn Tyr Phe Arg Trp Asp Lys Lys	
605 610 615 620	
gaa caa tac tct gac ttg cac cga ttc tgt tgc ctc atg acc aaa ttc	1923
Glu Gln Tyr Ser Asp Leu His Arg Phe Cys Cys Leu Met Thr Lys Phe	
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cgc aag gag tgc gag ggt ctt ggc ctt gag gat ttt cca acg gcc gaa	1971
Arg Lys Glu Cys Glu Gly Leu Gly Leu Glu Asp Phe Pro Thr Ala Glu	
640 645 650	
cgg ctg cag tgg cat ggt cat cag cct ggg aag cct gat tgg tct gag	2019
Arg Leu Gln Trp His Gly His Gln Pro Gly Lys Pro Asp Trp Ser Glu	
655 660 665	
aat agc cga ttc gtt gcc ttt tcc atg aaa gat gaa aga cag ggc gag	2067
Asn Ser Arg Phe Val Ala Phe Ser Met Lys Asp Glu Arg Gln Gly Glu	
670 675 680	
atc tat gtg gcc ttc aac acc agc cac tta ccg gcc gtt gtt gag ctc	2115
Ile Tyr Val Ala Phe Asn Thr Ser His Leu Pro Ala Val Val Glu Leu	
685 690 695 700	

ccg gag cgc aca ggg cgc cgg tgg gaa ccg gtg gtg gac aca ggc aag 2163  
 Pro Glu Arg Thr Gly Arg Arg Trp Glu Pro Val Val Asp Thr Gly Lys  
 705 710 715  
  
 cca gca cca tac gac ttc ctc act gac gac tta cct gat cgc gct ctc 2211  
 Pro Ala Pro Tyr Asp Phe Leu Thr Asp Asp Leu Pro Asp Arg Ala Leu  
 720 725 730  
  
 acc ata cac cag ttc tct cat ttc ctc aac tcc aac ctc tac ccc atg 2259  
 Thr Ile His Gln Phe Ser His Phe Leu Asn Ser Asn Leu Tyr Pro Met  
 735 740 745  
  
 ctc agc tac tca tgc gtc atc cta gta ttg cgc cct gat gtt tga 2304  
 Leu Ser Tyr Ser Ser Val Ile Leu Val Leu Arg Pro Asp Val  
 750 755 760  
  
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 35 40 45  
  
 Leu Gly Gly Ala Cys Arg Val Leu Ala Gly Met Pro Thr Pro Leu Gly  
 50 55 60  
  
 Ala Thr Ala Leu Ala Gly Gly Val Asn Phe Ala Val Tyr Ser Gly Gly  
 65 70 75 80  
  
 Ala Thr Ala Ala Ala Leu Cys Leu Phe Thr Pro Glu Asp Leu Lys Ala  
 85 90 95  
  
 Asp Arg Val Thr Glu Glu Val Pro Leu Asp Pro Leu Met Asn Arg Thr  
 100 105 110  
  
 Gly Asn Val Trp His Val Phe Ile Glu Gly Glu Leu Gln Asp Met Leu  
 115 120 125  
  
 Tyr Gly Tyr Arg Phe Asp Gly Thr Phe Ala Pro His Cys Gly His Tyr  
 130 135 140

Leu Asp Val Ser Asn Val Val Val Asp Pro Tyr Ala Lys Ala Val Ile  
 145 150 155 160  
 Ser Arg Gly Glu Tyr Gly Val Pro Ala Arg Gly Asn Asn Cys Trp Pro  
 165 170 175  
 Gln Met Ala Gly Met Ile Pro Leu Pro Tyr Ser Thr Phe Asp Trp Glu  
 180 185 190  
 Gly Asp Leu Pro Leu Arg Tyr Pro Gln Lys Asp Leu Val Ile Tyr Glu  
 195 200 205  
 Met His Leu Arg Gly Phe Thr Lys His Asp Ser Ser Asn Val Glu His  
 210 215 220  
 Pro Gly Thr Phe Ile Gly Ala Val Ser Lys Leu Asp Tyr Leu Lys Glu  
 225 230 235 240  
 Leu Gly Val Asn Cys Ile Glu Leu Met Pro Cys His Glu Phe Asn Glu  
 245 250 255  
 Leu Glu Tyr Ser Thr Ser Ser Ser Lys Met Asn Phe Trp Gly Tyr Ser  
 260 265 270  
 Thr Ile Asn Phe Phe Ser Pro Met Thr Arg Tyr Thr Ser Gly Gly Ile  
 275 280 285  
 Lys Asn Cys Gly Arg Asp Ala Ile Asn Glu Phe Lys Thr Phe Val Arg  
 290 295 300  
 Glu Ala His Lys Arg Gly Ile Glu Val Ile Leu Asp Val Val Phe Asn  
 305 310 315 320  
 His Thr Ala Glu Gly Asn Glu Asn Gly Pro Ile Leu Ser Phe Arg Gly  
 325 330 335  
 Val Asp Asn Thr Thr Tyr Tyr Met Leu Ala Pro Lys Gly Glu Phe Tyr  
 340 345 350  
 Asn Tyr Ser Gly Cys Gly Asn Thr Phe Asn Cys Asn His Pro Val Val  
 355 360 365  
 Arg Gln Phe Ile Val Asp Cys Leu Arg Tyr Trp Val Thr Glu Met His  
 370 375 380  
 Val Asp Gly Phe Arg Phe Asp Leu Ala Ser Ile Met Thr Arg Gly Ser  
 385 390 395 400  
 Ser Leu Trp Asp Pro Val Asn Val Tyr Gly Ala Pro Ile Glu Gly Asp  
 405 410 415  
 Met Ile Thr Thr Gly Thr Pro Leu Val Thr Pro Pro Leu Ile Asp Met  
 420 425 430  
 Ile Ser Asn Asp Pro Ile Leu Gly Gly Val Lys Leu Val Ala Glu Ala  
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Trp Asp Ala Gly Gly Leu Tyr Gln Val Gly Gln Phe Pro His Trp Asn  
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 Val Trp Ser Glu Trp Asn Gly Lys Tyr Arg Asp Ile Val Arg Gln Phe  
 465 470 475 480  
 Ile Lys Gly Thr Asp Gly Phe Ala Gly Gly Phe Ala Glu Cys Leu Cys  
 485 490 495  
 Gly Ser Pro His Leu Tyr Gln Ala Gly Gly Arg Lys Pro Trp His Ser  
 500 505 510  
 Ile Asn Phe Val Cys Ala His Asp Gly Phe Thr Leu Ala Asp Leu Val  
 515 520 525  
 Thr Tyr Asn Asn Lys Tyr Asn Leu Pro Asn Gly Glu Asn Asn Arg Asp  
 530 535 540  
 Gly Glu Asn His Asn Leu Ser Trp Asn Cys Gly Glu Glu Gly Glu Phe  
 545 550 555 560  
 Ala Arg Leu Ser Val Lys Arg Leu Arg Lys Arg Gln Met Arg Asn Phe  
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 Phe Val Cys Leu Met Val Ser Gln Gly Val Pro Met Phe Tyr Met Gly  
 580 585 590  
 Asp Glu Tyr Gly His Thr Lys Gly Gly Asn Asn Asn Thr Tyr Cys His  
 595 600 605  
 Asp Ser Tyr Val Asn Tyr Phe Arg Trp Asp Lys Lys Glu Gln Tyr Ser  
 610 615 620  
 Asp Leu His Arg Phe Cys Cys Leu Met Thr Lys Phe Arg Lys Glu Cys  
 625 630 635 640  
 Glu Gly Leu Gly Leu Glu Asp Phe Pro Thr Ala Glu Arg Leu Gln Trp  
 645 650 655  
 His Gly His Gln Pro Gly Lys Pro Asp Trp Ser Glu Asn Ser Arg Phe  
 660 665 670  
 Val Ala Phe Ser Met Lys Asp Glu Arg Gln Gly Glu Ile Tyr Val Ala  
 675 680 685  
 Phe Asn Thr Ser His Leu Pro Ala Val Val Glu Leu Pro Glu Arg Thr  
 690 695 700  
 Gly Arg Arg Trp Glu Pro Val Val Asp Thr Gly Lys Pro Ala Pro Tyr  
 705 710 715 720  
 Asp Phe Leu Thr Asp Asp Leu Pro Asp Arg Ala Leu Thr Ile His Gln  
 725 730 735  
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